FDN-2593/DIV

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicants	:	James F. Curry et al	)	Group Art Unit 1714
Serial No.	:	10/669,046	)	Examiner Tae H. Yoon
Filed	:	09/23/2003	)	
For	:	AQUEOUS DISPERSIONS OF LOW-MOLECULAR WEIGHT, LOW-MELTING AND WATER INSOLUBLE POLYMERS		

1361 Alps Road
Wayne, NJ 07470

NOVEMBER 29, 2006

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

AMENDED BRIEF ON APPEAL

This Amended Appeal Brief is submitted in reply to the Examiner's Notification mailed October 24, 2006 responding to Appellant's Appeal/Brief.

The Commissioner is hereby authorized to charge any Extension Fee under 37 C.F.R. 1.138 to our Deposit Account No. 07-0650.

1. REAL PARTY IN INTEREST

ISP INVESTMENTS INC., of 300 Delaware Avenue, Wilmington, Delaware 19801, is the owner of the entire right, title and interest in the appealed application.

2. RELATED APPEALS AND INTERFERENCES

No other appeals or interferences related to this application are known to applicants or to said assignee of entire right, title and interest.

3. STATUS OF ALL CLAIMS

Claims 1-3 and 15 have been rejected and previously amended and are appealed herein. Accordingly the claims pending in this application are independent claim 1 and dependent claims 2-3 and 15. The Appellant wishes to have each claim considered separately and not to stand or fall together. Claims 4-14 have been cancelled.

4. STATUS OF AMENDMENTS

Advisory Action	-	07/19/2006
(entered Amendment to claims, overcame rejections under 112, 2nd pp.)		
Amendment Under 37 C.F.R. 1.116	-	06/27/2006
Final Rejection	-	04/24/2006
Amendment	-	10/18/2005
Response to Notice of Non-Compliant Amendment (37 C.F.R. 1.121)	-	11/01/2005
Office Communication	-	10/27/2005

5. REFERENCES CITED

U.S. PATENT	DATE	INVENTOR	CLASS/SUBCLASS
4,072,527	02-1978	Fan, Roxy N.	430/273.1
5,468,598	11-1995	Miller et al.	430/372
5,734,006	03-1998	Narayanan, K.S.	528/323
5,231,070	07-1993	Narayanan et al.	504/113
6,303,131	10-2001	Narayanan, K.S.	424/400
5,336,712	08-1994	Austgen et al.	524/530
2,835,654	05-1958	Carter Albert S. et al	528/372

OTHER REFERENCES

Hawley's Condensed Chemical Dictionary, 13th Ed., p. 671 (1987).

6. SUMMARY OF THE INVENTION

What is claimed herein is an aqueous dispersion, preferably a homogeneous micro-dispersion, consisting essentially of (a) 0.1-40% by weight, preferably 5-30%, of a water-insoluble alkylated vinyl pyrrolidone copolymer having a pyrrolidone content of >10%, in which the copolymer particles have a particle size <10 microns, preferably 0.1-2 microns, and (b) 0.001-30% by weight, preferably 0.002-20%, of a polymeric anionic emulsifier, preferably selected from the group consisting of a lignin sulfonate, neutralized methyl vinyl ether-maleic acid half-ester or polyacrylic acid with >10% acrylic acid, or salts thereof, and mixtures thereof.

7. STATEMENT OF ISSUES PRESENTED

Claims 1-3 and 15 stand rejected under 35 U.S.C. 103(a) on Narayanan '131 in view of Carter '254.

The Examiner has stated that the term "consisting essentially of" was insufficient to overcome a rejection based on the art reciting "comprising".

The Examiner also stated in the Advisory Action that Nara '131 teaches that the microemulsion is a stable dispersion even though it appears as a single phase to the naked eyes. Also the claims recite the size of the polymer as <10 microns, preferably 0.1 to 2 μ, and Narayanan '131 discloses a size of 0.01 to 0.1 μ.

The secondary prior art Carter '254 discloses lignin sulfonate as inherently a polymeric emulsifier.

Claims 1-3 (and cancelled 6 and 7) were rejected under 35 U.S.C. 112, second paragraph, as indefinite for the use of certain terms. The claims were corrected for '112 in the subsequent amendment of 6/27/06. The Office Action of 09/13/05, page 3 had stated that claims 1-3, 6 and 7 would be allowable if rewritten to overcome the '112 objections since "the prior art of record failed to teach or suggest the instant aqueous dispersion consisting of (a), (b) and water.

8. THE ARGUMENT

Claims 1-3 and 15 were rejected under 35 U.S.C. 103(a) on Narayanan '131 in view of Carter '254. This rejection was maintained because the term "consisting essentially of" was alleged to be insufficient to overcome a rejection based on the art reciting "comprising". Accordingly, Applicant has demonstrated by a Declaration given by Dr. Narayanan that N-octyl pyrrolidone, present in Narayanan's '131 single phase,

microemulsion composition, would materially change the characteristics of applicant's invention. Particularly, the presence of N-octyl pyrrolidone in the invention composition would change it from the desired aqueous dispersion, (a two-phase system), wherein the polymer is suspended in the anionic emulsifier, to a detrimental microemulsion.

In summary, this Declaration establishes that the presence of N-octyl pyrrolidone transfers the aqueous dispersion of the invention (a two-phase system) into a microemulsion (a one-phase system). In this invention, the smaller particle size in the Narayanan single phase system is not desired herein. Rather a dispersion of copolymer particles of defined size is necessary for a suitable dispersion of the copolymer.

The Examiner stated that Narayanan in '131 teaches that a microemulsion is a dispersion having a particle size of 0.01 to 0.1 micron. However, in applicants composition the two-phase dispersion of the polymer (in the absences of a co-emulsifier such as N-octyl pyrrolidone) is defined by a much larger particle size of polymer, i.e. <10 microns, preferably <5-6 microns and, most preferably, 0.1-2 microns. In contrast, in Narayanan '131, N-octyl pyrrolidone is present in the composition to transform it into a microemulsion with a polymer particle size in the lower range of 0.01to 0.1 microns to create a single phase system.

Accordingly, the term "consisting essentially of" (a) and (b) does not allow for the inclusion of N-octyl pyrrolidone in the aqueous dispersion, an essential component in Narayanan's '131 reference microemulsion composition.

The Examiner has stated that Carter discloses that lignin sulfate is a well known anionic emulsifier, and that Narayanan teaches employing an anionic emulsifier. However, the invention herein consists essentially of a combination of named components in defined amounts and physical parameters which is not

shown or described in either of the references, singly or together. The specification herein teaches that many different anionic emulsifiers may be used in the invention combination; however polymeric emulsifiers, e.g. lignin sulfonate, neutralized methyl vinyl ether-maleic acid half-ester, and polyacrylic acid are preferred emulsifiers, particularly in claims 1-3 and 15 and in the specification examples, which are not mentioned in the secondary references for use in the composition of this invention.

Appellant wishes to point out that claim 1 specifically defines the invention over the previous art of the same inventor as consisting essentially of an aqueous dispersion of (a) 0.1-40% by wt. of a water-insoluble alkylated vinyl pyrrolidone copolymer having a pyrrolidone content of >10%, in which the copolymer particles have a particle size <10 microns and (b) 0.001-30% by wt. of a polymeric anionic emulsifier an inventive combination of components, amounts and parameters.

Claim 2 is limited to a homogeneous micro-dispersion wherein (a) is 5-30% and (b) is 0.002-20%, and the polymer size is 0.1-2 microns.

Claim 3 defines (a) as 10-20% and (b) 0.005-10%.

Claim 15 defines the polymeric anionic emulsifier as selected from the group consisting of particular named emulsifiers.

9. CONCLUSION

In the light of the above discussion, appellants respectfully request the Honorable Board to reverse the rejection of claims 1-3 and 15 under 35 U.S.C. 103(a) and indicate the patentability of these claims.

Respectfully submitted,

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THE APPEALED CLAIMS

Claim 1. An aqueous dispersion consisting essentially of (a) 0.1-40% by wt. of a water-insoluble alkylated vinyl pyrrolidone copolymer having a pyrrolidone content of > 10%, in which the copolymer particles have a particle size <10 microns, and (b) 0.001-30% by wt. of a polymeric anionic emulsifier.

Claim 2. An aqueous dispersion according to claim 1 which is a homogeneous micro-dispersion, and wherein (a) is 5-30% and (b) is 0.002-20% and said polymer size is about 0.1-2 microns.

Claim 3. An aqueous dispersion according to claim 1 wherein (a) is 10-20% and (b) is 0.005-10%.

Claim 15. An aqueous dispersion according to claim 1 wherein said polymeric anionic emulsifier is selected from the group consisting of a lignin sulfonate, neutralized methyl vinyl ether-maleic acid half-ester or polyacrylic acid with >10% acrylic acid, or salts thereof, and mixtures thereof.

EVIDENCE APPENDIX

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Commissioner for Patents
P.O. BOX 1450
Alexandria, VA 22313-1450

Sir:

DECLARATION OF KOLAZI S. NARAYANAN

I, DR. KOLAZI S. NARAYANAN, hereby depose and say:

1. That I am a named applicant in the above-described U.S. patent application.

2. That I am a Science Fellow with International Specialty Products, in Wayne, New Jersey. I am involved with development of advanced formulation systems for Performance Chemicals and Agricultural Products. I joined the company in 1987 as Technical Associate and became Senior Research Scientist in 1991. Previously, (1979-1987), I was with Vineland Chemical Company, Vineland, New Jersey, as Technical Director. I have received 104 U.S. patents and 50 technical publications. My recent publications and interests are: universal emulsifiable concentrate systems, microemulsion technology, microemulsifiable solid systems, superior adjuvants, instantly dispersible solids, leaching inhibition, and UV stabilization of pesticides, delivery of hydrophobic materials in water as nano-scale particles, sustained release delivery systems, and polymeric dispersants, and interactions with polymers/surfactants and small molecules. I received a Ph.D. in physical organic chemistry from Oklahoma State University in 1978, M.Sc and B.Sc (Honors) degrees from Delhi University.

I received the (ISP) President's award for outstanding Technical Contributions to International Specialty Products (1994), and a second time for Team work in 2003.

3. That N-octyl pyrrolidone was disclosed as essential in my prior patent to maintain the composition as a single phase microemulsion.

4. However, the presence of N-octyl pyrrolidone in the invention composition would change its characteristics materially away from the desired aqueous dispersion, i.e. a two-phase system, where the polymer is suspended in the anionic emulsifier, into a detrimental microemulsion.

5. In this invention, the copolymer particles have a defined size which is necessary for a suitable dispersion of the copolymer. These sizes are much larger than in my prior composition.

6. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Kolazi S. Narayanan

Date June 27, 2006

RELATED PROCEEDINGS APPENDIX

(NONE)

THE APPENDIX